

General

Title

Imaging efficiency: percentage of brain CT studies with a simultaneous sinus CT.

Source(s)

Centers for Medicare and Medicaid Services (CMS). Hospital outpatient quality reporting specifications manual, version 11.0. Baltimore (MD): Centers for Medicare and Medicaid Services (CMS); Effective 2018 Jan. various p.

Yale New Haven Health Services Corporation/Center for Outcomes Research and Evaluation, The Lewin Group. Simultaneous use of brain computed tomography and sinus computed tomography (OP-14): 2017 annual reevaluation report. Baltimore (MD): Centers for Medicare & Medicaid Services (CMS); 2017. 23 p.

Measure Domain

Primary Measure Domain

Related Health Care Delivery Measures: Use of Services

Secondary Measure Domain

Clinical Efficiency Measures: Efficiency

Brief Abstract

Description

This measure is used to assess the percentage of brain computed tomography (CT) studies with a simultaneous sinus CT (i.e., brain and sinus CT performed on the same day at the same facility).

Rationale

A brain computed tomography (CT) is often ordered in addition to a sinus CT because headache is a common symptom related to sinusitis; however, simultaneous CT sinus and brain imaging for headache without suspected complications is generally considered inappropriate (AIM Specialty Health, 2014; Jordan et al., 2009) as the imaging field for a brain CT contains large portions of the sinuses (AIM

Specialty Health, 2014); performing both procedures is duplicative and results in inefficiency and lower quality care. Beyond concerns of efficiency and cost, there may be safety concerns to a patient undergoing two scans. A CT of the head has a typical effective radiation dose of approximately 2.3 milliSieverts (mSv), equivalent to approximately 115 chest X-rays. A CT of the paranasal sinuses and maxillofacial area is equivalent to approximately 50 chest X-rays (1 mSv) (American Imaging Management, 2012).

Evidence for Rationale

AIM Specialty Health. Appropriate use criteria: imaging of the head & neck. Chicago (IL): AIM Specialty Health; 2014 May 14. 55 p. [162 references]

American Imaging Management (AIM). Diagnostic imaging utilization management. 2011–2012 Program Guidelines, v.7.2.1. [internet]. Deerfield (IL): American Imaging Management; 2012 [accessed 2013 May 29].

Jordan JE, Wippold FJ II, Cornelius RS, Amin-Hanjani S, Brunberg JA, Davis PC, De La Paz RL, Dormont D, Germano I, Gray L, Mukherji SJ, Seidenwurm DJ, Sloan MA, Turski PA, Zimmerman RD, Zipfel GJ, Expert Panel on Neurologic Imaging. ACR Appropriateness Criteria® headache. [online publication]. Reston (VA): American College of Radiology (ACR); 2009. 8 p. [51 references]

Yale New Haven Health Services Corporation/Center for Outcomes Research and Evaluation, The Lewin Group. Simultaneous use of brain computed tomography and sinus computed tomography (OP-14): 2017 annual reevaluation report. Baltimore (MD): Centers for Medicare & Medicaid Services (CMS); 2017. 23 p.

Primary Health Components

Brain computed tomography (CT); sinus CT

Denominator Description

Brain computed tomography (CT) studies (see the related "Denominator Inclusions/Exclusions" field)

Numerator Description

Of studies identified in the denominator, studies with a simultaneous sinus computed tomography (CT) study (i.e., on the same date, at the same facility as the brain CT) (see the related "Numerator Inclusions/Exclusions" field)

Evidence Supporting the Measure

Type of Evidence Supporting the Criterion of Quality for the Measure

A clinical practice guideline or other peer-reviewed synthesis of the clinical research evidence

One or more research studies published in a National Library of Medicine (NLM) indexed, peer-reviewed journal

Additional Information Supporting Need for the Measure

See "Simultaneous Use of Brain Computed Tomography and Sinus Computed Tomography (OP-14): 2017 Annual Reevaluation Report" for a literature review summarizing clinical guidelines and other scientific evidence relevant to the importance and scientific acceptability of this outpatient imaging efficiency measure.

Evidence for Additional Information Supporting Need for the Measure

Yale New Haven Health Services Corporation/Center for Outcomes Research and Evaluation, The Lewin Group. Simultaneous use of brain computed tomography and sinus computed tomography (OP-14): 2017 annual reevaluation report. Baltimore (MD): Centers for Medicare & Medicaid Services (CMS); 2017. 23 p.

Extent of Measure Testing

During the measure development process, the Centers for Medicare and Medicaid Services (CMS) completed testing of the measure's specifications, including evaluation of the measure's scientific acceptability and feasibility of implementation by a Technical Expert Panel. A dry run, evaluating measure performance at each facility eligible for public reporting, was performed prior to measure implementation; no major stakeholder concerns were raised about the specifications, feasibility, or usability at that time. CMS continues to monitor stakeholder inquiries for concerns about measure calculation or scientific acceptability; feedback received through this vehicle can feed into the measure update cycle, as is appropriate.

Evidence for Extent of Measure Testing

McKiernan C. (Consultant, The Lewin Group, Falls Church, VA). Personal communication. 2016 Feb 9. 1 p.

State of Use of the Measure

State of Use

Current routine use

Current Use

not defined yet

Application of the Measure in its Current Use

Measurement Setting

Ambulatory/Office-based Care

Ambulatory Procedure/Imaging Center

Hospital Outpatient

Professionals Involved in Delivery of Health Services

not defined yet

Least Aggregated Level of Services Delivery Addressed

Single Health Care Delivery or Public Health Organizations

Statement of Acceptable Minimum Sample Size

Specified

Target Population Age

Unspecified

Target Population Gender

Either male or female

National Strategy for Quality Improvement in Health Care

National Quality Strategy Priority

Making Quality Care More Affordable

Prevention and Treatment of Leading Causes of Mortality

Institute of Medicine (IOM) National Health Care Quality Report Categories

IOM Care Need

Not within an IOM Care Need

IOM Domain

Effectiveness

Efficiency

Data Collection for the Measure

Case Finding Period

Case Finding Period

Encounter dates: July 1 through June 30

Denominator Sampling Frame

Enrollees or beneficiaries

Denominator (Index) Event or Characteristic

Diagnostic Evaluation

Encounter

Denominator Time Window

not defined yet

Denominator Inclusions/Exclusions

Inclusions

Brain computed tomography (CT) studies

Initial Patient Population: This measure applies only to Medicare beneficiaries enrolled in original, fee-for-service (FFS) Medicare who were treated as outpatients in hospital facilities reimbursed through the Outpatient Prospective Payment System (OPPS). These measures do not include Medicare managed care beneficiaries, non-Medicare patients, or beneficiaries who were admitted to the hospital as inpatients.

Beneficiaries included in the measure's initial patient population had documentation of a brain CT performed within a one-year window of claims data. Beneficiaries can be included in the measure's initial patient population multiple times; each brain CT performed at a facility measured by OPPS is counted once in the measure's denominator.

Exclusions

Beneficiaries who have a clinical diagnosis of one or more conditions for which imaging is considered appropriate are excluded from the measure.

For this measure, beneficiaries whose brain CT had one of these four clinical diagnoses recorded on the claim are excluded from the measure's initial patient population; these conditions include cancer, trauma, orbital cellulitis, or intracranial abscess. For all four groups of conditions, clinical evidence exists (within a practice guideline or the peer-reviewed literature) that indicates performing a brain CT followed immediately by a sinus CT may be appropriate care. Consequently, any beneficiary with one or more of these conditions is excluded from the measure.

Note: Refer to the original measure documentation for Current Procedural Terminology (CPT) and International Classification of Diseases, Tenth Revision (ICD-10) code categories and corresponding organizational ID (OID) codes for the value set in the Value Set Authority Center (VSAC).

Exclusions/Exceptions

not defined yet

Numerator Inclusions/Exclusions

Inclusions

Of studies identified in the denominator, studies with a simultaneous sinus computed tomography (CT) study (i.e., on the same date, at the same facility as the brain CT)

Note: Refer to the original measure documentation for Current Procedural Terminology (CPT) and International Classification of Diseases, Tenth Revision (ICD-10) code categories and corresponding organizational ID (OID) codes for the value set in the Value Set Authority Center (VSAC).

Exclusions

None

Numerator Search Strategy

Fixed time period or point in time

Data Source

Administrative clinical data

Type of Health State

Does not apply to this measure

Instruments Used and/or Associated with the Measure

None

Computation of the Measure

Measure Specifies Disaggregation

Does not apply to this measure

Scoring

Rate/Proportion

Interpretation of Score

Desired value is a lower score

Allowance for Patient or Population Factors

not defined yet

Standard of Comparison

not defined yet

Identifying Information

Original Title

OP-14: imaging efficiency measure: simultaneous use of brain computed tomography (CT) and sinus computed tomography (CT).

Measure Collection Name

Hospital Outpatient Quality Measures

Measure Set Name

Imaging Efficiency

Submitter

Centers for Medicare & Medicaid Services - Federal Government Agency [U.S.]

Developer

Centers for Medicare & Medicaid Services - Federal Government Agency [U.S.]

Funding Source(s)

United States Department of Health and Human Services

Composition of the Group that Developed the Measure

Centers for Medicare & Medicaid (CMS) Contractor

Financial Disclosures/Other Potential Conflicts of Interest

None

Measure Initiative(s)

Hospital Compare

Hospital Outpatient Quality Reporting Program

Adaptation

This measure was not adapted from another source.

Date of Most Current Version in NQMC

2018 Jan

Measure Maintenance

This measure is reevaluated annually by responding to stakeholder input and incorporating advances in the science or changes in coding.

Date of Next Anticipated Revision

Unspecified

Measure Status

This is the current release of the measure.

This measure updates previous versions:

Centers for Medicare and Medicaid Services (CMS). Hospital outpatient quality reporting specifications manual, version 9.0a. Baltimore (MD): Centers for Medicare and Medicaid Services (CMS); Effective 2016 Jan 1. various p.

Centers for Medicare and Medicaid Services (CMS). OP-8: MRI lumbar spine for low back pain -- literature review. Baltimore (MD): Centers for Medicare and Medicaid Services (CMS); 2014 May. 26 p.

Centers for Medicare and Medicaid Services (CMS). OP-8: MRI lumbar spine for low back pain -- specifications. Baltimore (MD): Centers for Medicare and Medicaid Services (CMS); 2014 Apr. 12 p.

Measure Availability

Source available from the [QualityNet Web site](#) .

Check the QualityNet Web site regularly for the most recent version of the specifications manual and for the applicable dates of discharge.

NQMC Status

This NQMC summary was completed by ECRI Institute on May 7, 2014. The information was verified by the measure developer on August 8, 2014.

This NQMC summary was updated by ECRI Institute on December 22, 2015. The information was verified by the measure developer on February 9, 2016.

This NQMC summary was updated again by ECRI Institute on February 22, 2018. The information was verified by the measure developer on April 19, 2018.

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Production

Source(s)

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